WHAT IS CLAIMED IS:

1. A method for matching a response intensity of a sensor array to an odorant with the detection threshold of a human nose to said odorant, said method comprising:

exposing said odorant to an array of sensors to produce said response intensity, thereby matching said response intensity of said sensor array to said detection threshold of said human nose.

2. A method in accordance with claim 1, wherein said sensor array comprises at least two sorption-based sensors which are members selected from the group consisting of a chemiresistors, a conducting/nonconducting regions sensor, a SAW sensor, a metal oxide gas sensor, a bulk conducting polymer sensor, a Langmuir-Blodgett film sensor, and combinations thereof.

3. A method in accordance with claim 2, wherein said sensor is a conducting/nonconducting regions sensor.

4. A method in accordance with claim 2, wherein said sensor is a bulk conducting polymer sensor.

5. A method in accordance with claim 3, wherein said nonconducting region is an organic polymer.

6. A method in accordance with claim 5, wherein said organic polymer is a member selected from the group consisting of (poly(4-vinyl phenol), poly(α-methyl styrene), poly(vinyl acetate), poly(sulfone), poly(caprolactone), poly(ethylene-co-vinyl acetate), poly(ethylene oxide), poly(ethylene), poly(butadiene), poly(vinylidine fluoride), poly(n-butyl methacrylate), poly(epichlorohydrin) and poly(ethylene glycol)).

7. A method in accordance with claim 1, wherein said odorant is a member selected from the group consisting of alkanes, alkenes, alkynes, dienes, alicyclic hydrocarbons, arenes, alcohols, ethers, ketones, aldehydes, carbonyls, carbanions, heterocycles, polynuclear aromatics, organic derivatives, biomolecules, microorganisms, bacteria, viruses, sugars, nucleic acids, isoprenes, isoprenoids, fatty acids and their derivatives.

8. A method in accordance with claim 1, wherein said response intensity of said sensor array to said odorant is inversely proportional to the vapor pressure of said odorant.

9. A method for validating that a sensor array response intensity matches a human nose detection threshold, the method comprising:

(a) contacting said sensor array with a constant fraction of a known vapor pressure of a first odorant to produce a first response intensity;

(b) contacting said sensor array with said constant fraction of a known vapor pressure of a second odorant to produce a second response intensity; and

(c) comparing said first response intensity to said second response intensity, thereby validating that said sensor array response intensity matches said human nose detection threshold.

10. A method in accordance with claim 9, wherein said sensor array comprises at least two sorption-based sensors which are members selected from the group consisting of a chemiresistors, a conducting/nonconducting regions sensor, a SAW sensor, a metal oxide gas sensor, a bulk conducting polymer sensor, a Langmuir-Blodgett film sensor, and combinations thereof.

11. A method in accordance with claim 10, wherein said sensor is a conducting/nonconducting regions sensor.

12. A method in accordance with claim 10, wherein said sensor is a bulk conducting polymer sensor.

13. A method in accordance with claim 11, wherein said nonconducting region is an organic polymer.

14. A method in accordance with claim 13, wherein said organic polymer is a member selected from the group consisting of (poly(4-vinyl phenol), poly(α-methyl styrene), poly(vinyl acetate), poly(sulfone), poly(caprolactone), poly(ethylene-co-vinyl acetate), poly(ethylene oxide), poly(ethylene), poly(butadiene), poly(vinylidine fluoride), poly(n-butyl methacrylate), poly(epichlorohydrin) and poly(ethylene glycol)).

15. A method in accordance with claim 9, wherein said odorant is a member selected from the group consisting of alkanes, alkenes, alkynes, dienes, alicyclic hydrocarbons, arenes, alcohols, ethers, ketones, aldehydes, carbonyls, carbanions, heterocycles, polynuclear aromatics, organic derivatives, biomolecules, microorganisms, bacteria, viruses, sugars, nucleic acids, isoprenes, isoprenoids, fatty acids and their derivatives.

16. A method in accordance with claim 9, wherein said first response intensity is greater than said second response intensity if said first vapor pressure is lower than said second vapor pressure and said fraction is not constant.